

A Presentation to the Montana Wind and Transmission Workgroup

November 15, 2012

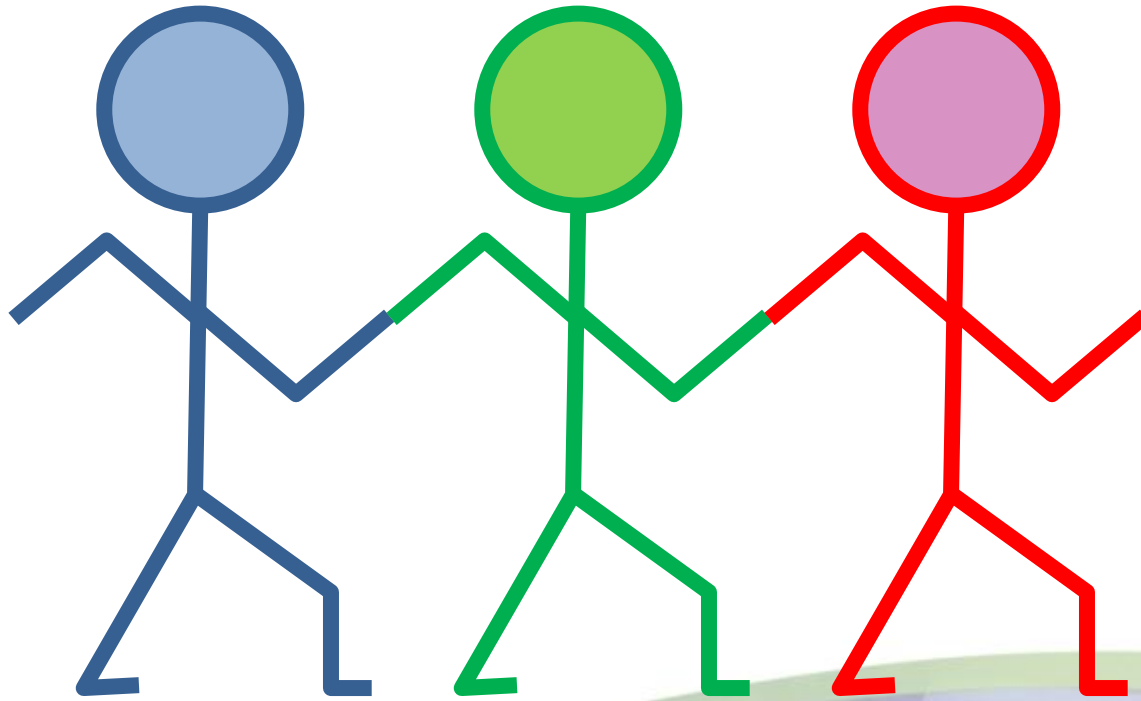
Ted Williams, PE
Head of Transmission



Customers are Customers

Some investments directly benefit **blue** and not **green**.

Some investments directly benefit **red** and not **blue**.



**...BUT ALL BENEFIT FROM
ROBUST INFRASTRUCTURE**

Thought Provoking Examples

Last major transmission investment in Montana

- ❖ Three Rivers to Jackrabbit 161 kV line
- ❖ Built to serve growing Gallatin Valley load
- ❖ \$25 million investment
- ❖ Never increased bulk system throughput
- ❖ Paid for in every wheeling transaction



Gaelectric about to do transmission deal with NWE

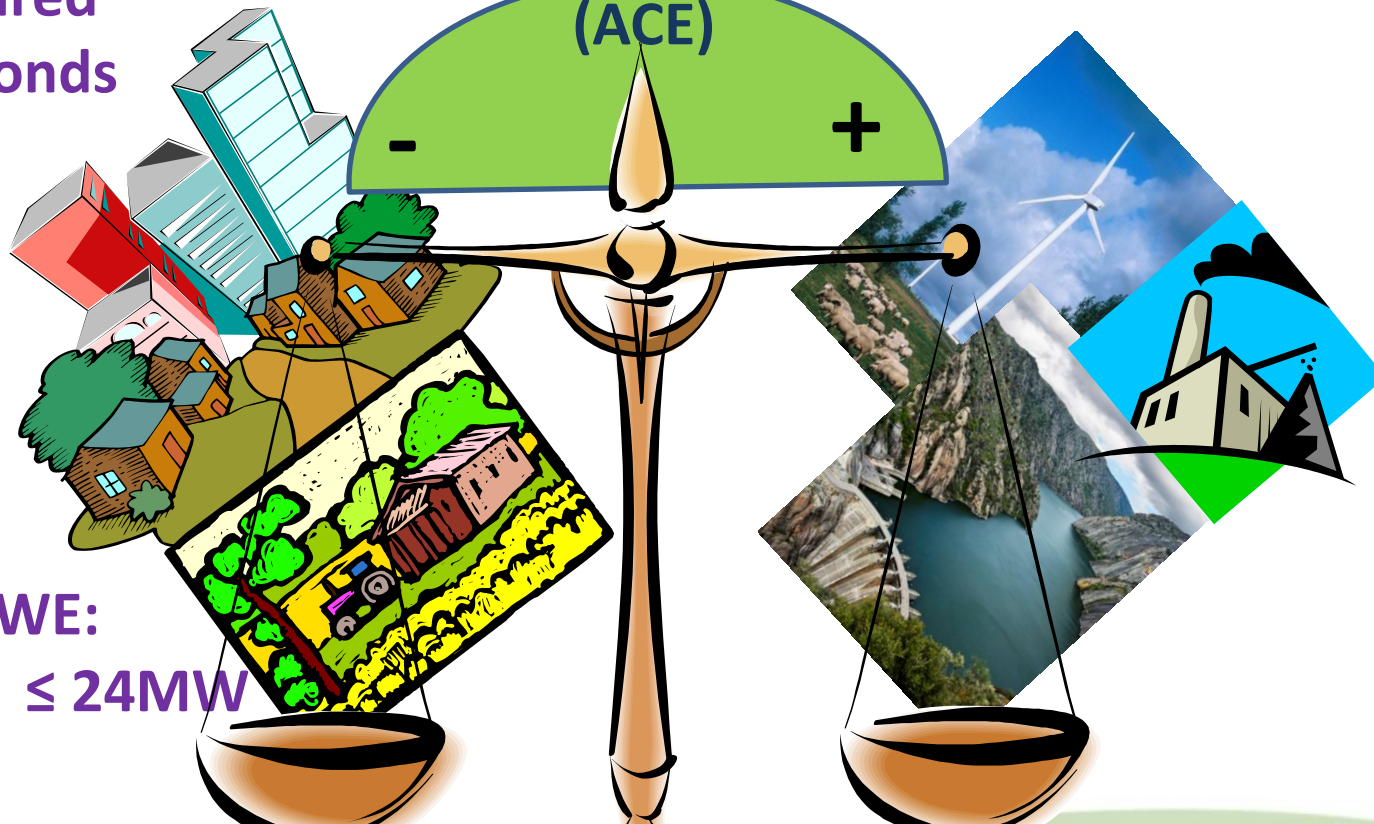
- ❖ Over \$5 million annual revenue to NWE
- ❖ Will be credited to native load customers
- ❖ No transmission investments required

So, who is subsidizing whom?

What is a Balancing Area?

Area Control Error
(ACE)

ACE measured
every 4 seconds



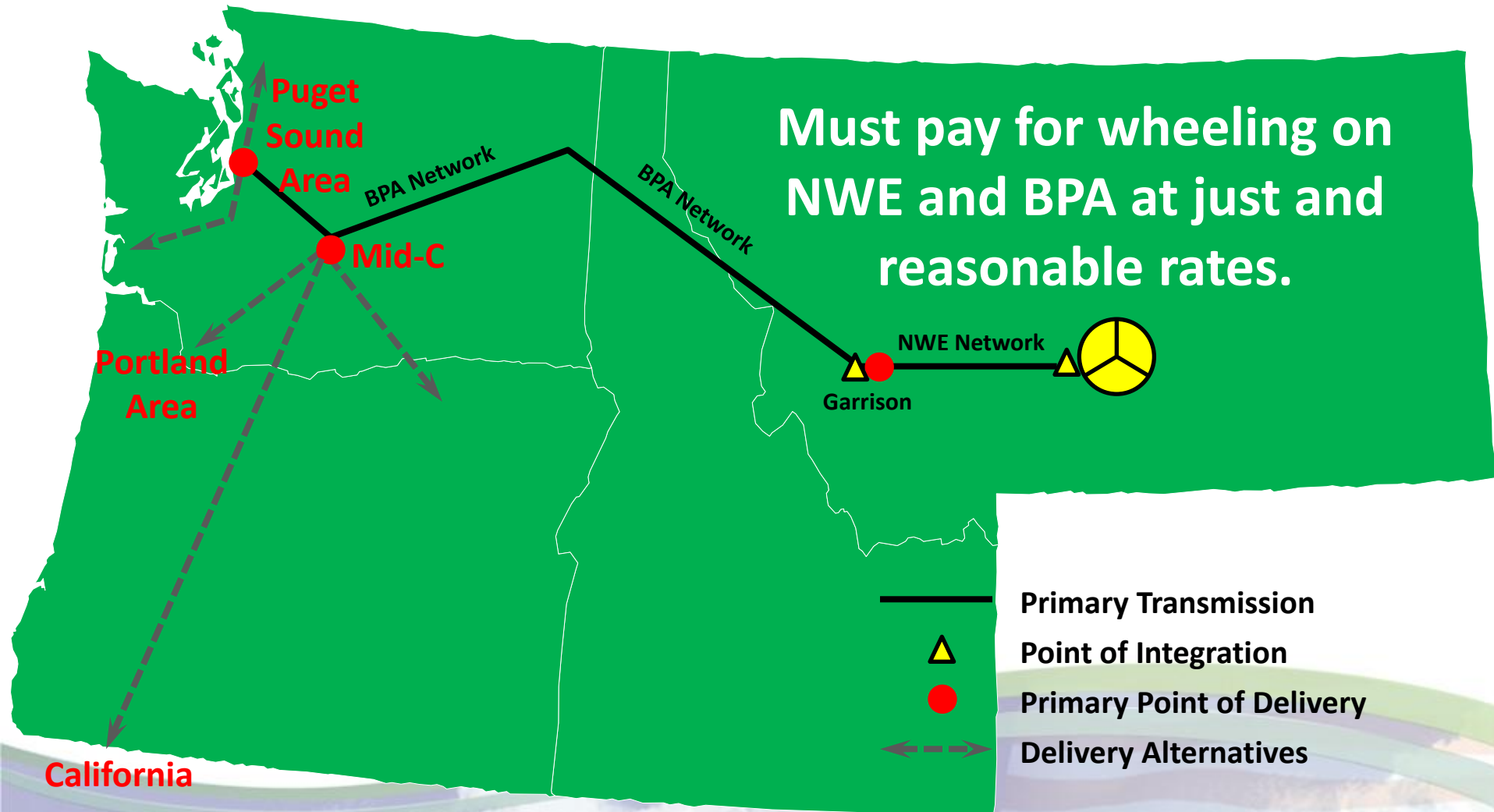
For NWE:

$$|ACE_{10 \text{ min}}| \leq 24 \text{ MW}$$

MUST BE COMPLIANT 90% OF THE 10 MIN PERIODS IN THE MONTH !

**Testing underway on “reliability-based” control.
Holds promise for a more efficient method.**

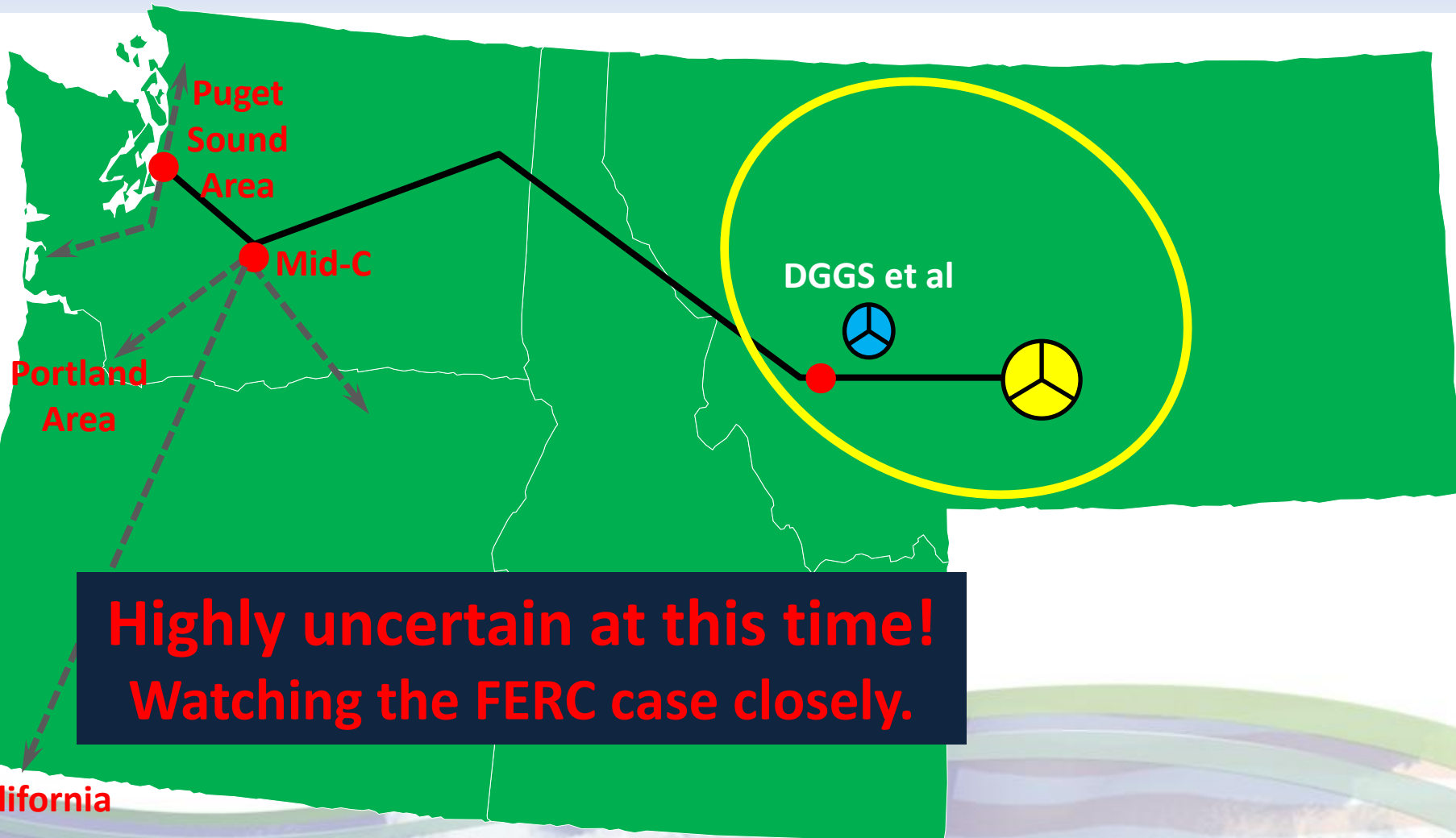
Potential Customers



Four options available to Gaelectric for ancillary services

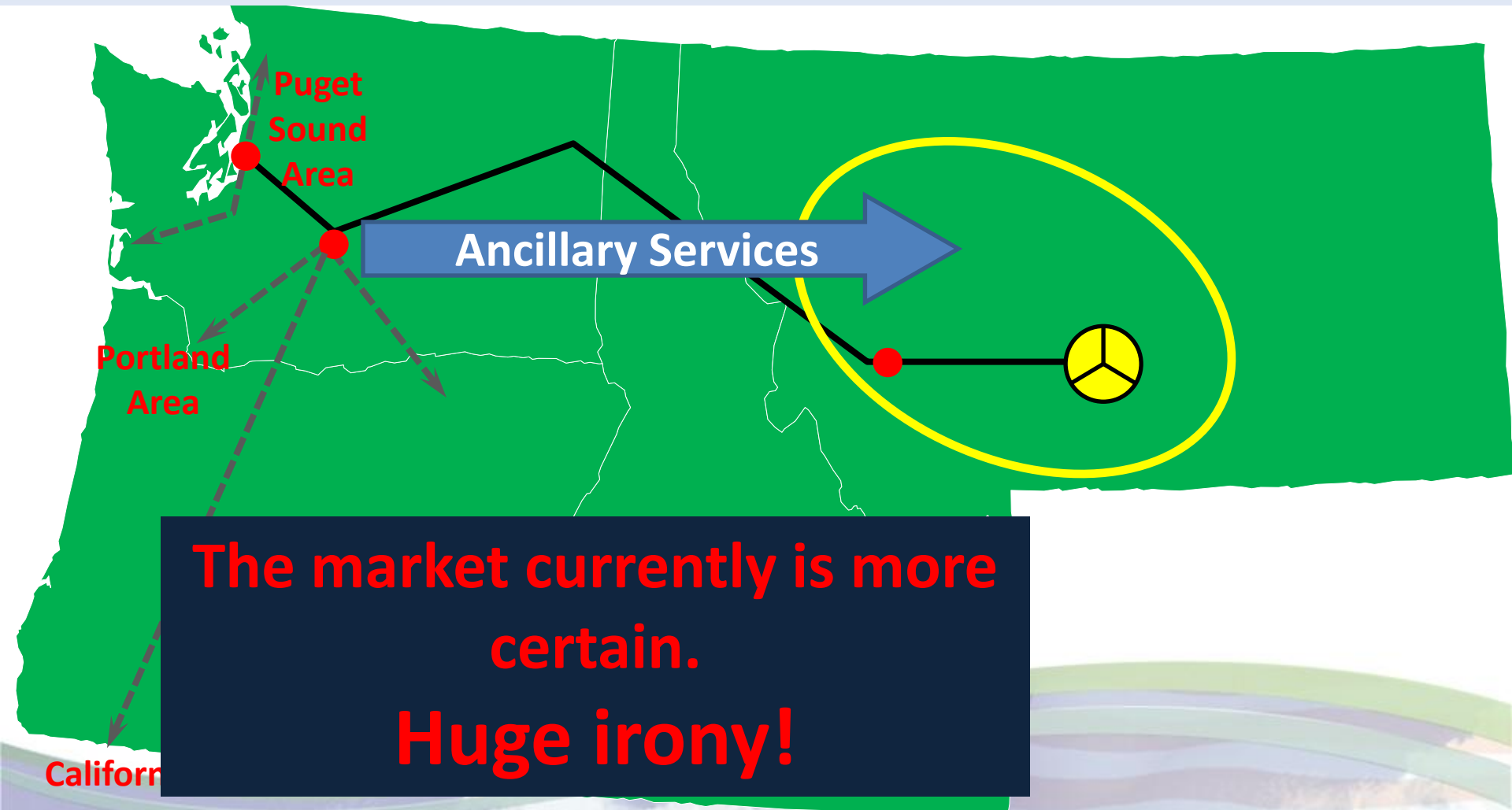
Generate in the NWE BA

Purchase Ancillary Services from NWE



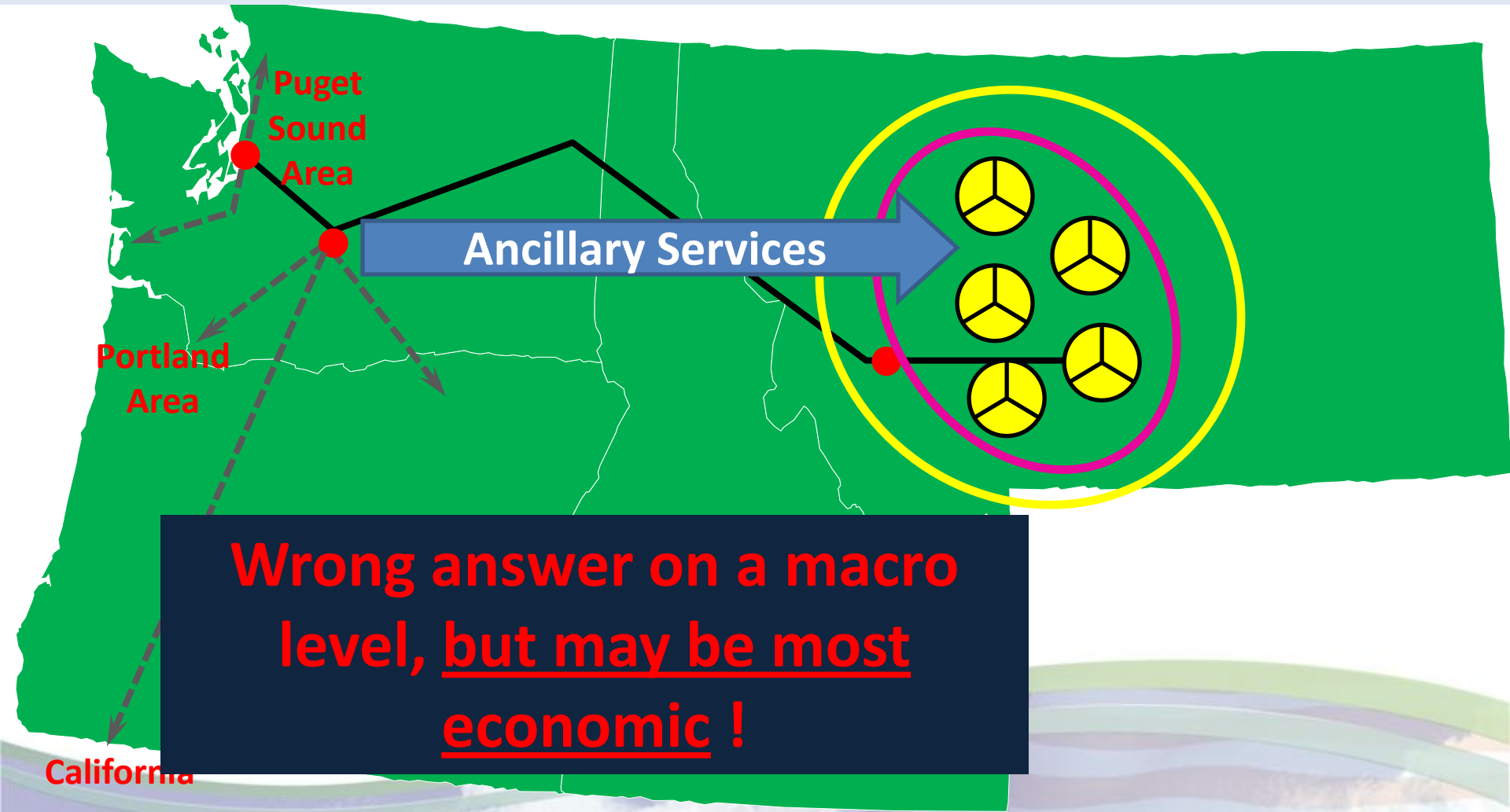
Generate in the NWE BA

Import Ancillary Services to NWE (i.e. self-supply)



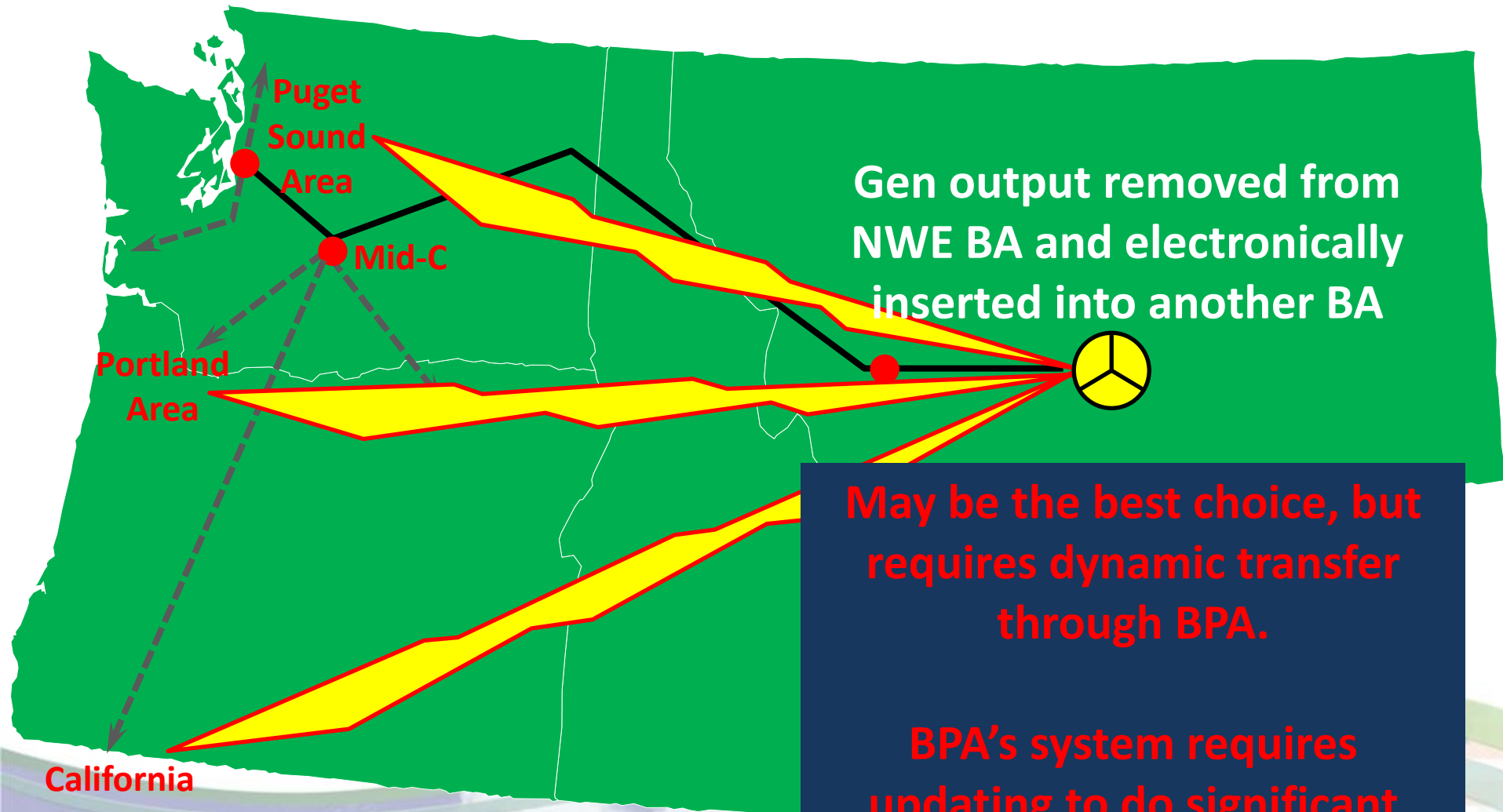
Generate in a Wind-Only BA

Import Ancillary Services to Sub-BA thru NWE



Wrong answer on a macro level, but may be most economic !

Generate in the BA of the Customer



May be the best choice, but requires dynamic transfer through BPA.

BPA's system requires updating to do significant dynamic transfer.

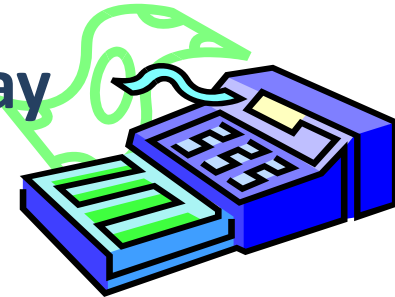
Closing Thoughts

Avoiding cross subsidization of customer groups was debated ad nauseum in the Order 888 process

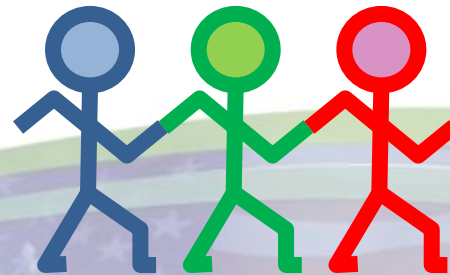
- “higher of” rate methodology
- security requirements



Ultimate customers should and will pay transmission and integration costs



All customers benefit from a robust transmission system



Thoughts, Observations or Questions?



